

IN THE CLAIMS:

Claims 1-13 (Canceled)

14. (Previously Presented) A laser machining system comprising:

a work-piece;

at least one light source that produces a laser light along a first axis, the laser light defining a first portion of laser light and a second portion of laser light, the first portion includes collimated light, the second portion includes noncollimated light, the second portion being radially inward relative to the first portion;

an optical element that reflects the first portion of laser light at an angle relative to the first axis so that the second portion of laser light passes through the optical element along the first axis;

a first optical assembly that collimates the first portion of laser light into a first light beam of a first cross-sectional area onto the work-piece at a sufficient power density to machine the work-piece; and

a second optical assembly that collimates the second portion of laser light into a second light beam having a second cross-sectional area onto the work-piece at a sufficient power density to machine the work-piece, the second optical assembly including a redirecting assembly and a telescopic arrangement to redirect and collimate the second portion of the laser light into the second light beam toward the work-piece so that the second light beam is spaced apart relative to the first light beam.

15. (Currently Amended) The laser machining system of claim [4] 14, wherein the second optical assembly includes a beam expander to expand the second portion of laser light into the second cross-sectional area substantially equal to the first cross-sectional area.

16. (Previously Presented) The laser machining system of claim 15, wherein the beam expander comprises a diverging lens.

17. (Previously Presented) A laser machining system comprising:

a work-piece;

at least one light source that produces a laser light along a first axis, the laser light defining a first portion of laser light and a second portion of laser light, the first portion includes collimated light, the second portion includes noncollimated light, the second portion being radially inward relative to the first portion;

an optical element that reflects the first portion of laser light at an angle relative to the first axis so that the second portion of laser light passes through the optical element along the first axis;

a first optical assembly that collimates the first portion of laser light into a first light beam of a first cross-sectional area onto the work-piece at a sufficient power density to machine the work-piece;

a second optical assembly that collimates the second portion of laser light into a second light beam having a second cross-sectional area onto the work-piece at a sufficient power density to machine the work-piece; and

a telescopic arrangement separate from the first and second optical assemblies to collimate the second portion of the laser light.

18. (Currently Amended) The laser machining system of claim [4] 14, wherein at least one of the first and second optical assemblies includes a prism, a turning mirror and at least one focusing lens.

19. (Currently Amended) The laser machining system of claim [1] 14, wherein the power densities of the first and second collimated beams is at least 1 Megawatt per centimeter squared.

20. (Currently Amended) The laser machining system of claim [4] 14, wherein the first light beam is disposed for rotation about the first axis and the second light beam is disposed for rotation about a second axis spaced from and parallel to the first axis.

21. (Previously Presented) A laser machining system comprising:

a work-piece including a first orifice having a first taper and a first ellipticity and at least a second orifice having a second taper and a second ellipticity in the work piece, the first taper and the second taper having a variability therebetween of about plus-or-minus 10% and the first ellipticity and the second ellipticity having a variability therebetween of about plus-or-minus 10%;

at least one light source that produces a laser light along a first axis, the laser light defining a first portion of laser light and a second portion of laser light, the second portion being radially inward relative to the first portion;

an optical element that reflects the first portion of laser light at an angle relative to the first axis so that the second portion of laser light passes through the optical element along the first axis; and

a first optical assembly that collimates the first portion of laser light into a first light beam of a first cross-sectional area onto the work-piece at a sufficient power density to machine the work-piece.

22. (Currently Amended) A machining system comprising:

a work-piece;

a light source that produces substantially collimated light along a first axis, the light defining a first portion of light and a second portion of light, the second portion being radially inward relative to the first portion;

means for directing the first portion of the light at an angle relative to the first axis towards the light source and the second portion of light away from the light source along the first axis; and

means for collimating the first portion of light into a first light beam having a first cross-sectional area onto the work-piece at a sufficient first power density to machine the work-piece,

wherein the means for directing comprise an optical element having an opening and a reflector surface intersecting and oblique to the first axis such that the first portion of light is reflected at an angle relative to the first axis and the second portion of light passes through the opening.

23. (Original) The machining system of claim 22, wherein the first portion of laser light comprises non-collimated light and wherein at least a portion of the second portion of laser light comprises collimated light such that the ratio of irradiance between the collimated light and the non-collimated light ranging from about 1:1 to about 0.1:1.

24. (Original) The machining system of claim 21, wherein the light source comprises at least one of a gas or solid-state laser and the plurality of light sources comprises at least one of a copper vapor laser and a frequency doubled Neodymium:Yttrium-Aluminum-Garnet (Nd:YAG) laser.

25. (Canceled)

26. (Currently Amended) The machining system of claim 22 ~~25~~, wherein the optical element comprises a scraper reflector and the opening comprises a generally circular diameter between from 20 microns to approximately 650 microns.

27. (Original) The machining system of claim 26, wherein the means for collimating comprises a redirecting assembly, a telescopic arrangement and a beam expander to redirect and collimate the second portion of the laser light into a second light beam of a second cross-sectional area at a sufficient second power density to machine the workpiece, and wherein each of the first and second power densities comprises at least 1 Megawatt per centimeter squared.

28. (Original) The machining system of claim 22, wherein the means for collimating comprise a prism, a turning mirror and at least one focusing lens.

29. (Original) The machining system of claim 27, wherein the first light beam is disposed for rotation about the first axis and the second light beam is disposed for rotation about a second axis spaced from and parallel to the first axis.